# NASA Procedural Requirements

**NPR 8705.2A**
Effective Date: February 07, 2005
Expiration Date: February 07, 2010

**COMPLIANCE IS MANDATORY**

Printable Format (PDF)

## Subject: Human-Rating Requirements for Space Systems

**Responsible Office: Office of Safety and Mission Assurance**

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# Preface

## P.1 Purpose

NASA's policy is to protect the health and safety of humans involved in or exposed to space activities, specifically the public, crew, passengers, and ground personnel. NASA will fulfill all requirements of this NPR (NPR 8705.2) for all space systems involving humans or interfacing with human space systems prior to becoming operational and throughout the system's use. A program is eligible for human-rating certification only if it meets engineering requirements, health requirements, and safety requirements contained in this NPR (NPR 8705.2). Human-rating certification provides the maximum reasonable assurance that a failure will not result in a crew or passenger fatality or permanent disability.

## P.2 Applicability

a. The requirements in this NPR (NPR 8705.2) shall apply to all space systems (hardware and software), developed and/or operated by or for NASA, that support human activity in space and that interact with crewed NASA human-rated space systems. This includes, but is not limited to, space systems, space suits, planetary bases, planetary rovers, and surface vehicles (Requirement 34241).

   Note: If an expendable launch vehicle is used as part of a system that carries humans, then NPR 8705.2 applies to the system, including the expendable launch vehicle portion. Ground support subsystems such as the launch facility and mission control are included as part of the total system when the system is being human-rated.

b. The Agency Program Management Committee shall determine the applicability of the requirements in this NPR (NPR 8705.2) to programs in existence (e.g., Space Shuttle and International Space Station) and to major modifications of those programs in the future (Requirement 34243).

c. The requirements in this NPR (NPR 8705.2) shall apply to internationally provided space systems as documented in distinct separate agreements, such as joint or multilateral agreements (Requirement 34244).

d. The requirements in this NPR (NPR 8705.2) shall be made applicable to contractors only through contract clauses, specifications, or statements of work in conformance with the NASA Federal Acquisition Regulation (FAR) supplement and not as direct instructions to contractors (Requirement 34245).

e. The requirements in this NPR (NPR 8705.2) shall supersede any conflicting requirements imposed by other NASA procedural requirements and standards (Requirement 34246).

f. The requirements in this NPR (NPR 8705.2) shall supplement more stringent requirements imposed by other Federal Government agencies (Requirement 34247).

g. In this NPR (NPR 8705.2), a requirement is identified by "shall" and descriptive material by "is."

## P.3 Authority

a. 42 U.S.C. 2473 (c)(1), Section 203 (c)(1) of the National Aeronautics and Space Act of 1958, as amended.

b. NPD 7120.4, Program/Project Management.
c. NPD 8700.1, NASA Policy for Safety and Mission Success.

## P.4 Applicable Documents

a. NASA Standard 3000 Volume I - II, Man-Systems Integration Standards.
b. NASA Standard 5001, Structural Design and Test Factors of Safety for Spaceflight Hardware.
c. NASA Standard 5007, General Fracture Control Requirements for Manned Spaceflight Systems.
d. NASA-STD-8719.13, Software Safety Standard.
e. JPG 8080.5, JSC Design and Procedural Standards Manual.
f. JSC 26882, NASA Space Flight Health Requirements.
g. MIL-STD-1472, Department of Defense Design Criteria Standard - Human Engineering.
h. Additional related reference documents are listed in Appendix A.

## P.5 Cancellation

NPR 8705.2, dated June 19, 2003.

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**/S/**
**Bryan O'Connor**
**Chief Safety and Mission Assurance Officer**

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## Concurrences:

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